Dkt. 2271/75606

Listing of Claims

The following listing of claims will replace all prior versions, and listings, of claims in the subject application:

Claims 1-3 (canceled).

- 4. (currently amended) The image formation apparatus as claimed in claim 18 [[1]], wherein the [[a]] first ink drop is discharged by the pressurized ink chamber being contracted after being expanded, where a volume of contraction is greater than a volume of expansion, and where the volume of expansion may take a positive value or zero.
- 5. (previously presented) The image formation apparatus as claimed in claim 4, wherein a second ink drop is discharged at an interval substantially equal to (n+1/2) x Tc from the first ink drop that precedes the second ink drop.
- 6. (currently amended) The image formation apparatus as claimed in claim 18 [[1]], wherein a speed of one of the ink drops (the ink drop speed Vj) discharged at the interval substantially equal to (n+1/2) x Tc from the preceding ink drop is set at greater than three m/s, and at a speed at which the sequential ink drops are merged.
- 7. (currently amended) The image formation apparatus as claimed in claim 18 [[1]], wherein four or more of the sequential ink drops merge during flight to form one of the relatively large ink drops.

Dkt. 2271/75606

- 8. (currently amended) The image formation apparatus as claimed in claim 18 [[1]], wherein a waveform containing driving pulses for discharging the sequential ink drops includes a waveform for suppressing a residual vibration after a driving pulse for discharging the last ink drop.
- 9. (original) The image formation apparatus as claimed in claim 8, wherein the waveform for suppressing the residual vibration is provided within an elapsed time equivalent to Tc after the last ink drop is discharged.
- 10. (currently amended) The image formation apparatus as claimed in claim 18 [[1]], wherein a medium-sized ink drop and a small-sized ink drop are each formed by selecting a part of driving pulses for forming the relatively large ink drop.
- 11. (original) The image formation apparatus as claimed in claim 10, wherein the driving pulses include a waveform for vibrating a meniscus without causing an ink drop to be discharged.
- 12. (original) The image formation apparatus as claimed in claim 10, wherein the driving pulses include a section wherein a voltage is applied to the pressure generating means for pressurizing ink in the pressurized ink chamber.
 - 13. (original) The image formation apparatus as claimed in claim 12, wherein the

Apr 21 10 08:29a.

Mitsuru SHINGYOHUCHI et al., Application No. 10/561,303 Page 4

Dkt. 2271/75606

pressure generating means is a piezoelectric device, and the piezoelectric device is recharged in the section wherein said voltage is applied.

- 14. (currently amended) The image formation apparatus as claimed in claim <u>18</u> [[1]], wherein the pressure generating means for generating the pressure for pressurizing the ink of the pressurized ink chamber is a piezoelectric device, a displacement direction of which is d33.
- 15. (original) The image formation apparatus as claimed in claim 14, wherein support sections of the piezoelectric device support partitions of the pressurized ink chamber.
- 16. (currently amended) The image formation apparatus as claimed in claim 18 [[1]], wherein at least one additional ink drops drop other than the at least one or more intermediate ink drops drop and the last drop is that are discharged at an interval substantially equal to (n+1/2) x Te are discharged at an interval substantially equal to n x Tc and not equal to (n+1/2) x Tc, and said additional ink drops merge with the one or more ink drops that are discharged at an interval nearly equal to (n+1/2) x Te.
- 17. (currently amended) The image formation apparatus as claimed in claim 18 [[1]], wherein a predetermined interval between first and second ink drops of the sequential ink drops is substantially equal to 1.5 x Tc such that the first and second ink drops merge before reaching a print target medium.
 - 18. (new) An image formation apparatus for forming a relatively large ink drop by

Dkt. 2271/75606

sequentially discharging a plurality of ink drops from an ink drop discharging head, the image formation apparatus comprising:

a pressure generating means being configured to generate pressure in an ink chamber to discharge ink drops in response to a drive pulse; and

a drive pulse supplying means configured to supply drive pulses to the pressure generating means, the drive pulses being configured to cause the pressure generating means to:

contract a volume of the ink chamber without first expanding the volume of the ink chamber to discharge an ink drop,

discharge a first ink drop at a first drop speed,

discharge at least one intermediate ink drop other than an ink drop that is not followed by any more of the ink drops in a given printing cycle (a last ink drop) at an interval substantially equal to (n+1/2) x Tc but not equal to n x Tc and at an intermediate drop speed,

discharge the last ink drop at an interval substantially equal to $n \times Tc$ but not equal to $(n+1/2) \times Tc$ and at a last drop speed, wherein

the first drop speed is faster than the intermediate drop speed, the last drop speed is faster than the first drop speed and the intermediate drop speed, and the last ink drop gathers the at least one intermediate ink drop and subsequently merges with the first ink drop before reaching a print target medium to form the large ink drop,

where n is an integer equal to or greater than 1, and Tc represents a resonance cycle of a pressurized ink chamber of the image formation apparatus, the interval being measured from when a corresponding preceding ink drop is discharged.

Dkt. 2271/75606

- 19. (new) The image formation apparatus as claimed in claim 18, wherein the sequential ink drops are discharged when the pressure generating means contracts the pressurized ink chamber.
- 20. (new) The image formation apparatus as claimed in claim 18, wherein the pressure generating means is configured to discharge the sequential ink drops such that the one or more of the sequential ink drops other than the last drop merge with the last drop in a reverse order from an order in which they were discharged.
- 21. (new) An image formation apparatus for forming a relatively large ink drop by sequentially discharging a plurality of ink drops from an ink drop discharging head, the image formation apparatus comprising:

pressure generating means for discharging:

one or more initial ink drops other than an ink drop that is not followed by any more of the ink drops in a given printing cycle (the last ink drop) at an interval substantially equal to (n+1/2) x Tc but not equal to n x Tc, thereby suppressing a pressure vibration of a pressurized ink chamber of the image formation apparatus, and

the last ink drop other than the one or more initial ink drops at an interval substantially equal to $n \times Tc$ in sync with a peak of the pressure vibration of the pressurized ink chamber but not equal to $(n+1/2) \times Tc$,

wherein the last ink drop travels at a higher speed than the one or more initial ink drops and merges the one or more initial ink drops before reaching a print target medium to form the

Dkt. 2271/75606

relatively large ink drop,

where n is an integer equal to or greater than 1, and Tc represents a resonance cycle of the pressurized ink chamber, the interval being measured from when a corresponding preceding ink drop is discharged.